

Attorney Docket No: 40116/00401 (1190)

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REMARKS**I. INTRODUCTION**

Claims 1-21 are pending in the present application. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

**II. THE 35 U.S.C. § 103(a) REJECTIONS SHOULD BE WITHDRAWN**

Claims 1-3, 6, 10-11, and 15-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,760,555 to Leung ("Leung") in view of U.S. Pat. No. 5,732,350 to Marko et al ("Marko"). (See 1/12/07 Office Action, pp. 3-9).

Leung is directed toward authenticating a mobile node. A server is configured to provide a plurality of security associations associated with a plurality of mobile nodes. A packet identifying a mobile node is sent to the server from a Home Agent. A security association for the mobile node identified in the packet may then be obtained from the server. The security association is sent to the network device to permit authentication. (See Leung, Abstract). Each Home Agent is associated with a set number of mobile nodes. (See Id., col. 6, ll. 56-59). Each mobile node requires authentication by contacting that mobile node's Home Agent. (See Id.).

Marko is directed toward a method for registering a mobile station in a radiotelephone communication system. The mobile station receives system information from a base station, including a cell grouping level. The mobile station determines if it is registered with the base station. If not, the mobile station first registers with the base station. The network controller of the radiotelephone communication system receives this registration data and subsequently automatically registers the mobile station with all base stations defined by the cell grouping level. (See Marko, Abstract). Specifically, Marko discloses that the other base stations defined by the cell grouping level pertain to immediately adjacent service areas (*i.e.*, neighboring).

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The Examiner correctly stated that Leung does not disclose or suggest "sending the authentication data to access points of the network" such that "when the roaming device roams to a particular access point of the access points...the authentication data [is used] to locally authenticate the roaming device at the particular access point," as recited in claim 1. (See 1/12/07 Office Action, p. 3, l. 20 – p. 4, l. 1). The Examiner attempted to cure this deficiency with Marko. However, it is respectfully submitted that the Examiner improperly combined the teachings of Leung with the teachings of Marko. Specifically, the teachings of Marko teach away from the teachings of Leung.

As discussed above, Leung teaches that a single Home Agent is responsible for a set of mobile nodes. (See Leung, col. 6, ll. 47-49). A mobile node is authenticated by sending security association data to the mobile node's Home Agent. (See Id., col. 6, ll. 56-59). Because no other Home Agent contains the security data relevant to a given mobile node, the mobile node's Home Agent is contacted. The use of a Home Agent effectively reduces the amount of traffic that would normally occur since the authentication server becomes unnecessary after the Home Agent receives the authentication data. Furthermore, the use of associating the mobile node with a single Home Agent further decreases the amount of traffic according to Leung. That is, the mobile node being associated with a single Home Agent is an integral part of Leung.

Also, as discussed above, Marko teaches that upon a first base station registering a mobile station, neighboring base stations are automatically registered with the mobile station. (See Marko, col. 7, ll. 32-38). Specifically, the neighboring base stations manage neighboring service areas of a service area of the first base station. Using a cell grouping level, the network controller registers the mobile station with the first and neighboring base stations. This technique eliminates multiple registrations due to signal fluctuations or shadowing between cells. Furthermore, cell registrations in the system are reduced because, once a mobile station is registered with a service area, a mobile station is also registered with adjacent service areas. (See Marko, col. 7, ll. 41-48). That is, the mobile station being associated with the first base station and the neighboring base stations is an integral part of Marko.

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Therefore, it is respectfully submitted that Marko teaches away from Leung because Marko teaches to automatically register more than one base station with the mobile station. In contrast, one specific objective of Leung is to prevent repetitive accesses to the authentication server through utilization of the Home Agents. That is, one either desires a system as taught by Leung having a single communication between a Home Agent and the authentication server or a system taught by Marko where multiple base stations register a single mobile station. Thus, the two references are incompatible.

The Examiner asserts that one of ordinary skill in the art would combine Leung with Marko to "reduce user registration traffic." (See 1/12/07 Office Action, p. 4, ll. 7-12). However, as discussed above, the method with which Leung reduces traffic differs fundamentally from the method with which Marko reduces traffic. There must be some motivation to combine the teachings of the prior art. The fact that Leung and Marko both concern an authentication procedure should not preclude the present invention since, as discussed above, such a combination was improper and would, therefore, not have been obvious to one skilled in the art. Because a primary feature in Leung is to associate a mobile device with only one Home Agent, it is further submitted that to combine Leung with any reference where more than one base station has authentication data of a mobile node is improper.

Thus, it is respectfully submitted that the Examiner improperly combined the teachings of Leung with Marko. Accordingly, it is respectfully submitted that claims 1-3, 6, 10-11, and 15-18 are therefore allowable.

Claims 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung in view of Marko and in further view of U.S. Pat. No. 5,408,683 to Ablay et al. ("Ablay"). (See 1/12/07 Office Action, pp. 9-10). Leung and Marko were discussed above.

As discussed above, Leung was improperly combined with Marko. The further combination of Ablay maintains the improper combination. Thus, it is respectfully submitted that claims 4-5 which depend from and, therefore, include all of the limitations of an allowable claim are also allowable.

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Claims 7, 8, and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung in view of Marko and in further view of U.S. Pat. No. 6,452,910 to Vij et al. ("Vij"). (See 1/12/07 Office Action, pp. 10-12). Leung and Marko were discussed above.

As discussed above, Leung was improperly combined with Marko. The further combination of Vij maintains the improper combination. Thus, it is respectfully submitted that claims 7, 8, and 13 which depend from and, therefore, include all of the limitations of an allowable claim are also allowable.

Claims 9, 12, and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung in view of Marko and in further view of U.S. Pat. Pub. No. 2002/0174335 to Zhang ("Zhang"). (See 1/12/07 Office Action, pp. 12-14). Leung and Marko were discussed above.

As discussed above, Leung was improperly combined with Marko. The further combination of Zhang maintains the improper combination. Thus, it is respectfully submitted that claims 9, 12, and 14 which depend from and, therefore, include all of the limitations of an allowable claim are also allowable.

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung in view of Zhang, with RFC 2138 incorporated to illustrate inherent properties of the RADIUS protocol. (See 1/12/07 Office Action, pp. 15-16). Leung was discussed above.

Zhang is directed toward converging both the authentication, accounting, and authorization process with data transmissions at the Internet Protocol layer. (See Zhang, abstract). Zhang still maintains a communication with the access point to an authentication server to authenticate mobile devices. (See *Id.*, p. 5, ¶[0074] – p. 6, ¶[0078]).

Claim 19 recites "with an authentication server, receiving an authentication request from a roaming device, the request being encrypted with a first shared code; with the authentication server, generating a session key associated with the roaming device; sending the session key to

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an access point of the network, the session key being encrypted with a second shared code; and utilizing the session key to authenticate the roaming device at the access point, and to encrypt data exchanged between the roaming device and the access point.”

Initially, it is respectfully submitted that the systems of Leung and Zhang are also not combinable. As discussed above, Leung teaches that a single Home Agent is responsible for a plurality of mobile stations. The Home Agent becomes responsible after a single authorization from an authentication server. Thus, once a mobile station is authenticated, the Home Agent is always responsible for authenticating the mobile station. In contrast, Zhang teaches that any access point may perform the authentication procedure for a mobile terminal that has entered the service area of the access point. The access point acts as a forwarding station to an ISP that is the authentication server. Thus, the authentication server always performs the authentication and the access point at which the mobile terminal is disposed is the conduit. That is, Leung discloses a system where upon authentication, no further transmissions are required to the authentication server while Zhang discloses a system where continuous transmissions are required to the authentication server. Therefore, it is respectfully submitted that one skilled in the art would not find the combination of Leung in view of Zhang obvious.

Furthermore, the Examiner correctly stated that Leung does not disclose utilizing the session key “to encrypt data exchanged between the roaming device and the access point,” as recited in claim 19. (See 1/12/07 Office Action, p. 15, ll. 13-14). The Examiner attempted to cure this deficiency with Zhang. However, Zhang only teaches and discloses the use of encryption, on any level, for authentication purposes only. Zhang contains absolutely no disclosure in its entirety about encrypting data exchanged between a mobile terminal and the access point after authentication.

Thus, it is respectfully submitted that the Examiner improperly combined the teachings of Leung with Zhang and even if combinable (which the Applicants do not concede), Zhang would not cure the deficiencies of Leung. Specifically, neither Leung nor Zhang, either alone or in combination, disclose or suggest utilizing the session key “to encrypt data exchanged between

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the roaming device and the access point," as recited in claim 19. Accordingly, it is respectfully submitted that claim 19 is therefore allowable.

Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung in view of Zhang and in further view of Marko. (See 1/12/07 Office Action, pp. 16-17). Leung, Zhang, and Marko were discussed above.

As discussed above, Leung was improperly combined with Marko. Also, as discussed above, Leung was improperly combined with Zhang. The further combination of Leung in view of Marko in further view of Zhang compounds the improper combination. Thus, it is respectfully submitted that claim 20 which depends from and, therefore, includes all of the limitations of an allowable claim is also allowable.

Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung in view of Zhang and in further view of U.S. Pat. No. 6,178,506 to Quick, Jr. ("Quick"). (See 1/12/07 Office Action, pp. 17-18).

As discussed above, Leung was improperly combined with Zhang. The further combination of Quick maintains the improper combination. Thus, it is respectfully submitted that claim 21 which depends from and, therefore, includes all of the limitations of an allowable claim is also allowable.

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CONCLUSION

In light of the foregoing, Applicants respectfully submit that all of the now pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Dated:

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